

DRAFT CURRICULUM

IN THE SUBJECT OF

PHYSIOLOGY HYGIENE

FOR CLASSES
(IX-X)

Developed By

Directorate of Curriculum & Teacher Education NWFP,
ABBOTTABAD
April, 2003

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LIST OF CONTENTS

S. No	Contents	Page No
1	Preface	1
2	Introduction	2
3	Aims & Objectives	3
4	Methodology	4
5	Direction for teacher guide preparation	5
6	Apparatus & Chemicals	6
7	List of experiments	7
8	Guide line for text book writers	8
9	Teachers orientation/training	9
10	Class IX Chapter 1 (Introduction)	10
11	Chapter 2 (Hygiene & Pollution)	11
12	Chapter 3 (Our food and eating habits)	12
13	Chapter 4 (Organization of human body)	13
14	Chapter 5 (Digestive system)	14
15	Chapter 6 (Respiratory system)	15
16	Chapter 7 (Circulatory system)	16
17	Class X Chapter 8 (Excretory system)	17
18	Chapter 9 (Nervous system)	18
19	Chapter 10 (Sports & locomotion)	19
20	Chapter 11 (Physiology of exercise)	20
21	Chapter 12 (Types of micro-organisms)	21
22	Chapter 13 (Diseases)	22
23	Chapter 14 (Socio-economic factor in national health)	23
24	List of committee members	24

PREFACE

A nation without means of reforms is a nation without means of survival. The best course to make reforms is always remain in education. The Federal Govt of Pakistan ~~faets~~ the need of modifying, revising and making abreast of time the curricula across the levels and subjects (I-XII). Form now in consonance of National Education Policy (1998-2010) already pure sciences, social sciences and languages curricula in two phases i.e 2002 AD and 2001 AD respectively have been designed and developed in collaboration with all 4 Curriculum Bureaux accordingly. This is the 3rd phase - 29 subjects yet 61 level is in operation.

The NWFP Curriculum & Teacher Education Directorate under the auspices of the Secretary School & Literacy Department and certainly in collaboration with Federal Ministry of Education, Curriculum Wing, Islamabad has convened various Provincial Draft Curriculum Development Committees meetings comprising working teachers, Subject Specialists, University/College teachers and Curriculum Developers to prepare the document in selected disciplines as per availability of financial assistance.

The curriculum development has always been remain continues process. Indeed, to accomplish this titanic task one needs immense commitment, stout vigour and profound professional insight. Special gratitude to Almighty Allah that such head & heart qualities were found among the members of the committees and others engaged in the process.

We don't claim that this work is complete in all respect. However, the Ministry can ameliorate it through the modicum efforts of NCDC. Before going to depart I must like to appreciate to both committee members and all subject specialists plus officials for fulfilling the task despite the snags and limitation.

Umar Farooq
Director
Curriculum & Teacher Education
NWFP, Abbottabad

INTRODUCTION:

Physiology & Hygiene is being taught at Secondary level as an optional subject. The treatment of the subject has always been descriptive. According to new Education Policy, the subject has been made more thematic and practical. There was little emphasis on practical and field work in the previous syllabus of physiology & Hygiene. In this syllabus observations, explanation, experimentation and application of the subject has been emphasized. The most recent concepts of the subject have also been added.

AIMS AND OBJECTIVES

1. To understand the importance of Physiology and Hygiene at personal and community level.
2. To inculcate the sense of gratitude of Almighty “Allah” for His blessings.
3. To help the students to understand the functioning of his own body system and its relationship to environment.
4. To participate more effectively in solving problems of human society and survival.
5. To inculcate interest in the students to observe cleanliness in relation of food and to develop good food habits.
6. To create an abiding interest in well being of their health.
7. To understand the need to keep body healthy and in good shape.
8. To utilize the scientific processes towards solving problems dealing with the individual society and human welfare.

METHODOLOGY

Syllabus will be taught according to the following methodology:

1. Concept related to the physiological processes should be absolutely clear.
2. Teaching of physiological system should be based upon lecture, demonstration and activity method.
3. Use of teaching aids.
4. The hygiene part of the course will be covered by lecture, dramas and visits.

DIRECTION FOR TEACHER GUIDE PREPARATION:

- i. List of reference books should be given chapter wise.
- ii. Prescribed experiments should be written on open-ended pattern.
- iii. Complete list of equipments/chemicals required for experiments should be given.
- iv. List of different scientific stores, which could provide the needed teaching equipment.
- v. Sufficient number of objective type test items on each topic especially (M.C.Qs) should be given for practices.

EVALUATION:

Division of Marks:

1. Theory 80%
 - a. Objective type test... 30%
 - b. Essay type test..... 50%
2. Practical 20%

APPARANTUS & CHEMICALS:

1. Microscope.
2. Microscopic slides.
3. Charts & Models.
4. Skeleton (Human).
5. Slide Projector.
6. Film Projector.
7. Over head Projector.
8. Transparencies.
9. Film strips.
10. Film slides.
11. Chemical thermometer.
12. B.P Apparatus (Electronic)
13. Glass wares:
Beakers, Test Tubes, Bottles, Jar, Dropper, Glass Rod, Glass slides, Cover Slips, Watch glasses, Petri-dishes, funnels, Sprit lamps.
14. White tiles.
15. Drawing boards.
16. Chemicals: ,
Sprit, Benedict's solution, Iodine solution, Midlon Reagent and Litmus papers.

LIST OF EXPERIMENTS:

1. Microscopic examination of polluted water.
2. Identification of carbohydrates, proteins and fats by using chemical tests.
3. Microscopic study of cell and Tissues.
4. Detection of analyze enzyme in saliva and studying its effect on starch by using Iodine Method.
5. To study different systems of man by charts, models, slides and preserved specimens.
6. Use of chemical thermometer.
7. Use of B.P Apparatus.
8. Study of prepared slides of pathogenic micro-organisms.
9. Use of lactometer.
10. To conduct plantation at school premises.

GUIDE LINE FOR TEXT BOOK WRITER:

The subject is an optional subject for humanities group of classes IX-X. Some introductory topics have already been discussed upto class VIII. The intention of this course to get acquainted the students with functions of various organ-system of the human body and to present before them information regarding major factors that many effect the personal health of an individual as well as the community.

The following points are recommended for writers:

- a. The language used should be simple and understandable.
- b. Avoid overburdening the students with unnecessary details of descriptive and terminology pay emphasis on more important and basic materials.
- c. Material should be presented with fully illustrated information.
- d. Provide comprehensive instructions for the experimental and field work.
- e. Questions should be concerned with understanding of the concepts and principles.
- f. Examples should be given from daily life experiences.
- g. Each chapter must be started with an introduction and followed by a summary.

TEACHERS ORIENTATION/TRAINING:

Before implementing revised curriculum, it is essential that secondary teachers should be imparted extensive training for teaching theory and conducting practical.

Teachers should be encouraged to use teaching aids such as Charts, Models, Slides and other related materials from their surroundings.

CHAPTER-1

CLASS-IX

INTRODUCTION

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: 1. To make students understand the basic concept of "Physiology & Hygiene". 2. To gain a better understanding of Physiology & Hygiene in the light of Quran & Hadith. 3. To develop an understanding about the relationship of Physiology & Hygiene with daily life.	1. Definition. 2. Importance of Physiology & Hygiene in the light of Islam. 3. Relationship of Physiology & Hygiene with daily life.	1. (i) Definition of Physiology (ii) Definition of Hygiene 2. (i) The Holy Quran & Physiology & Hygiene. (ii) Sayings of Holy Prophet (PBUH) about the Hygiene (iii) Physiology & Hygiene and society.	1. Presentation of references from the Holy Quran and Hadith. 2. Group discussion. 3. Preparation of chart showing Quranic injunctions and Hadith.	1. Observing the keenness & interest of students during their presentation & discussion. 2. Observing while they are making charts. 3. Objective type tests.
Psychomotor: To prepare charts.				

CHAPTER-2

CLASS-IX

HYGIENE AND POLLUTION

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: 1. To create awareness about personal & community Hygiene". 2. To make students understand the basic idea of pollution, its causes and effects.	1. Personal Hygiene. 2. Community Hygiene.	(i) Body cleanliness. (ii) Eating, drinking and clothing. (i) Maintenance of: a. Houses. b. Public places. c. Drainage. (ii) Disposal of rubbish.	I. Role play. (i) Individual (ii) Group activities II. Making charts & Models showing. III. Visiting polluted & Non polluted areas. IV. Preparing report of their visit.	1. Judging their cleanliness in the classroom and out of the classroom. 2. Evaluating their performance while making charts and models. 3. Observing their attitude while visiting different places. 4. Consolidation and finalization of submitted reports. 5. Objective type tests.
Affective: 1. Feeling for the improvement of quality of environment. 2. Appreciation for cleanliness.	3. Pollution.	(i) Air pollution. (ii) Water pollution (iii) Land pollution (iv) Noise pollution.		
Psychomotor: 1. To prepare charts. 2. To collect information through various sources.				

CHAPTER-3

CLASS-IX

OUR FOOD AND EATING HABITS

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: 1. To develop understanding of different types of food stuff. 2. To create the awareness of balanced diet. 3. To help the students to understand chemical composition of food stuff. 4. To create the awareness of regular meal time.	1. Different types of food stuff. 2. Energy requirements of cells & formation of protoplasm. 3. Balanced diet. 4. Eating habits.	1. Ingredients: Carbohydrates, proteins, fats, mineral, salts, vitamins and water. 2. Sources of energy: Food stuff, chemical composition and nature of foodstuff and nutritional requirements. 3. Calorific value of food and quality. 4. A. Regular meal times. B. Hygiene of hands and mouth. C. Care of teeth. D. Proper mastication E. Avoidance of over eating.	1. Making chart to show balanced diet. 2. Discussing of energy & foodstuff. 3. Showing the regular habits of eating and avoid the over eating.	1. Observing the students while they are preparing balanced diet chart. 2. Observing the performance while they are discussing. 3. Simple objective cum essay type tests.
Psychomotor: To identify carbohydrates proteins & fats by using chemicals.				

CHAPTER-4 **CLASS-IX** **ORGANIZATION OF HUMAN BODY**

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: 1. To understand the concept of cell. 2. To know the different types of tissues. 3. To get acquainted with various types of organs. 4. To define a system with example. Psychomotor: 1. To make charts and diagrams. 2. To prepare model of cell.	1. Cell. 2. Tissues. 3. Organs. 5. System.	i. Definition ii. Structure & functions: a. Cell membrane b. Cytoplasm i. Definition. ii. Types of tissues. i. Definition with few examples. i. Definition with few examples.	1. Making charts/Models showing components of cell. 2. Work sheet as group activity. 1. Drawing different types of tissues, organs and systems.	1. Observing the participation of students while they working. 2. Assessing students while working in groups. 3. Objective type tests.

CHAPTER-5 CLASS-IX

DIGESTIVE SYSTEM

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: <ol style="list-style-type: none"> To know about the digestion and parts of digestive system. To get knowledge about mechanism of digestion. Absorption Assimilation. 	<ol style="list-style-type: none"> Digestion Parts of digestive system. 	<ol style="list-style-type: none"> Definition Oral cavity Oesophagus Stomach Small intestine Large intestine Liver Pancreas 	<ol style="list-style-type: none"> Studying models/charts in groups. Drawing & labeling of digestive system. Making Models/Charts. Group discussion. 	<ol style="list-style-type: none"> Assessing the skills attitude of the students while working. Observing the keenness of students. Participating in discussion. Objective cum essay type tests.
Affective: Feelings of happiness and gratefulness to Allah for bestowing human body.	<ol style="list-style-type: none"> Mechanism of digestion. Absorption of food. Assimilation of food 	<ol style="list-style-type: none"> Mechanical digestion Biochemical digestion Role of villi. Assimilation of food 		
Psychomotor: To prepare charts/ Models/ Diagrams.				

CHAPTER-6

CLASS-IX

RESPIRATORY SYSTEM

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: <ol style="list-style-type: none"> 1. To be able to define respiration. 2. To explain different parts of respiratory system. 3. To make students understand the mechanism of respiration. 	<ol style="list-style-type: none"> 1. Respiration. 2. Respiratory organs. <ol style="list-style-type: none"> a. Structure b. Functions 3. Mechanism of respiration. 	<ol style="list-style-type: none"> i. Definition Respiratory organs: <ol style="list-style-type: none"> i. Nose ii. Pharynx iii. Larynx iv. Trachea v. Bronchi vi. Lungs Mechanism: <ol style="list-style-type: none"> i. Breathing ii. Transport of oxygen & carbon dioxide iii. Cellular respiration and release of energy. 	<ol style="list-style-type: none"> 1. Studying model/charts of respiratory system in groups. 2. Making Charts showing respiratory system. 2. Making models/charts to show mechanism of respiration. 	<ol style="list-style-type: none"> I. Observing while students are studying in-groups. II. Assessing their skills while preparing charts model. III. Evaluation through questions Answer technique. IV. Objective cum essay type tests.
Affective: Feelings of happiness while doing practical work.				
Psychomotor: <ol style="list-style-type: none"> 1. To prepare Diagrams & Charts. 2. To make Models 				

CHAPTER-7 CLASS-IX

CIRCULATORY SYSTEM

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: <ol style="list-style-type: none"> To be able to define circulatory system. To explain the structure and functions of heart. To be able to differentiate arteries, veins and capillaries To be able to explain: <ol style="list-style-type: none"> Blood composition & functions. Blood transfusion. Affective: <p>To create a spirit of blood donation.</p> Psychomotor: <ol style="list-style-type: none"> To draw structure of heart. Blood vessels. Blood cells. To feel the heart beat and pulse. 	<ol style="list-style-type: none"> Circulatory system Organs Functions Blood composition and functions. Blood transfusion. 	<ol style="list-style-type: none"> Definition <ol style="list-style-type: none"> Structure of heart. Structure of arteries, veins & capillaries. <ol style="list-style-type: none"> Function of heart. Function of blood vessels. <ol style="list-style-type: none"> Plasma. Blood cells: (RBC), (WBC) & blood platelets. <ol style="list-style-type: none"> Definition (ABO) blood group. Rh factor 	<ol style="list-style-type: none"> Studying in groups the Model of Heart/Actual Heart. Feeling heart beat and pulse. Making charts/model/diagrams of heart, blood vessels & blood cells. Making Charts to show blood transfusion & blood groups. 	<ol style="list-style-type: none"> Observing keenness of students while studying. Judging their attitude while feeling heart beat & pulse. Observing the interest of the students while they are working. <ol style="list-style-type: none"> Written work. Objective type tests. Essay type tests.

CHAPTER-8

CLASS-X

EXCRETORY SYSTEM

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: <ol style="list-style-type: none"> To get acquainted with the importance of excretory system. To have knowledge about excretory organs. To know about the mechanism of excretion. 	<ol style="list-style-type: none"> Excretion Excretory organs. <ol style="list-style-type: none"> Structure Function Mechanism of excretion 	<ol style="list-style-type: none"> Definition Excretory organs. <ol style="list-style-type: none"> Skin Kidney <ol style="list-style-type: none"> Role of Nephrons. Role of skin. 	<ol style="list-style-type: none"> Studying Models/prepared charts of skin & kidney in groups. Group discussion: <ol style="list-style-type: none"> Role of Nephron Role of skin Drawing of different parts of excretory organs. 	<ol style="list-style-type: none"> Assessing the attitude of students while working in groups. Observing while they are busy in discussion. Observing the interest of students while drawing. Objective cum essay type tests.
Affective: Feeling of joy while studying/discussing/drawing.				
Psychomotor: To draw & label different parts of excretory organs.				

CHAPTER-9

CLASS-X

NERVOUS SYSTEM

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: 1. To be able to define nervous system & its types 2. To have knowledge about structure & function brain, spinal cord & neuron. 3. To have knowledge about receptors & effectors. 4. To know about co-ordination through endocrine glands.	1. Nervous system 2. Types of nervous system 3. Brain & spinal cord 4. Neuron 5. Receptors/ effectors 6. Co-ordination through endocrine glands.	1. Definition 2. (i) Central nervous system (ii) Peripheral nervous system 3. Structure & function of brain & spinal cord. 4. Structure & function of neuron 5. Definition. (i) Types, structure and functions (ii) Reflex action. (iii) Pituitary gland. (iv) Thyroid gland (v) Insulin (vi) Adrenal gland	1. Studying the Model/fresh brain / chart 2. Making charts i. Central Neuron system ii. Reflex action 3. Group discussion	1. Assessing while students are studying. 2. Observing the skills & interest while students are making charts / busy in discussion 3. Evaluation through questions answers technique 4. Objective cum essay type tests.
Affective: Feeling of thankfulness to Allah.				
Psychomotor: To makes charts				

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CHAPTER-10

CLASS-X

SPORT & LOCOMOTION

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: <ol style="list-style-type: none"> 1. To understand the concept of locomotion. 2. To learn the names of different bones. 3. To differentiate the bones & cartilage. 4. To get acquainted with skeletal muscles. 	<ol style="list-style-type: none"> 1. Locomotion 2. Skeleton 3. Bone & cartilage 4. Skeletal muscles 	<ol style="list-style-type: none"> 1. Definition 2. Role o skeleton in support and locomotion 3. Bones & cartilage 4. (i) Structure (ii) Functions (iii)Health of bones Skeletal muscles Role of skeletal muscles 	<ol style="list-style-type: none"> 1. Studying the different parts of skeleton. 2. Group discussion 3. Making charts showing skeleton muscles. 4. Demonstration of movement of joints & muscles. 	<ol style="list-style-type: none"> 1. Observing while students are studying. 2. Assessing students during discussion. 3. Observing the participation while making charts. 4. Question answers techniques.
Affective: To foster a sense of gratitude to Allah for providing us with such a system of locomotion				
Psychomotor: <ol style="list-style-type: none"> 1. To study the model of skeleton. 2. To make charts. 3. To demonstrate the movements of Movable & Immovable 				

CHAPTER-11

CLASS-X

PHYSIOLOGY OF EXERCISE

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: To get acquainted with the importance of exercise	Advantages of exercise	Advantages of exercise: a. Oxygen requirement. b. Respiratory adjustment. c. Circulatory system adjustment. d. Health of muscles.	Different types of exercises.	1. Question answers techniques. 2. Objective type tests.
Affective: To be able to perform different exercises.				
Psychomotor: To urge for exercises.				

CHAPTER-12

CLASS-X

TYPES OF MICRO-ORGANISMS

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: <ol style="list-style-type: none"> To develop understanding of different types of microbes. To create awareness about pathogenicity of micro organisms & their habitat. To make students understand the advantages & disadvantages of micro-organisms. 	<ol style="list-style-type: none"> Different types and pathogenicity of micro organisms Habitat Economic importance of micro-organisms. 	<ol style="list-style-type: none"> (i) Viruses (ii) Bacteria (iii) Protozoans (iv) Pathogenic fungi/ (i) Air (ii) Water (iii) Soil (iv) Decaying organic (v) Living things Advantages and disadvantages of micro-organisms. 	<ol style="list-style-type: none"> Make charts of micro-organisms. Observe the slides of micro-organisms under microscope. Discuss the advantages & disadvantages of micro-organisms. 	<ol style="list-style-type: none"> Observing the students while making charts. Assessing the skills of students while using microscope. Question answers technique Objective cum essay type tests.
Psychomotor: <ol style="list-style-type: none"> To collect the slides of some micro organisms. To making charts of micro-organisms. 				

CHAPTER-13

CLASS-X

DISEASES

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: 1. To create awareness about different types of disease & their origin. 2. To know about causative agents of diseases. 3. To develop understanding about disease control.	1. Disease 2. Types and origin of disease 3. Causative agents	1. Definition 2. (i) Dietary (ii) Metabolic (iii) Genetic (iv) Contagious (v) Parasite 3. (i) Viruses (ii) Bacteria (iii) Protozoa (iv) Insects (v) Radiation (vi) Malnutrition (vii) Pollution 4. (i) Preventive measures (ii) Vaccination (iii) Drugs treatment (iv) Integrated disease management.	1. Group activity (Measuring B.P & noting temperature) 2. Presenting collected data about different diseases. 3. Group discussion 4. Visiting nearby health care unit. 5. Showing dramatically the difference between health condition of hygienic & un-hygienic family.	1. Assessing the ability & skills while working in groups. 2. Observing the participation in making speeches about collected data. 3. Evaluating their attitude & interest while discussing/visiting Health Care Unit. 4. Judging their keenness & attitudes in organizing & participating in dramas. 5. Question answers techniques. 6. Objective cum essay type tests.
Affective: 1. Feeling for the improvement of quality of life for every individual. 2. Appreciation for disease free society	4. Disease control 5. Common Diseases	4. (i) Preventive measures (ii) Vaccination (iii) Drugs treatment (iv) Integrated disease management. 5. (i) Measles (ii) Typhoid (iii) Cholera (iv) Polio (v) Tetnus (vi) Mumps (vii) Malaria (i) AIDS (ii) Cancer (iii) Hepatitis (iv) Cardiac disease		
Psychomotor: 1. Checking of blood pressure & temperature	6. Special diseases	6. (i) AIDS (ii) Cancer (iii) Hepatitis (iv) Cardiac disease		

CHAPTER-14 CLASS-X

SOCIO-ECONOMIC FACTOR IN NATIONAL HEALTH

OBJECTIVES	CONCEPTS	CONTENTS	ACTIVITIES	EVALUATION
Cognitive: 1. To understand the causes & consequences the mal nutrition. 2. To have knowledge about health care. 3. To be acquainted with harmful effects of drug addiction.	1. Mal nutrition 2. Health care 3. Drug addiction	1. Definition (i) Causes (ii) Consequences 2. (i) Infant mortality (ii) Child care (iii) Care of elderly people. 3. (i) Stimulants (ii) Intoxicants (iii) Narcotics	1. Making charts to show mal nutrition. 2. Organizing daramas: (i) Health care (ii) Drug addiction	1. Observing the participation in making charts. 2. Judging their keenness in role playing. 3. Objective type tests. 4. Questions answers techniques.
Affective: Desire to fight against drug addiction.				
Psychomotor: 1. To make charts. 2. To be able to organized the dramas.				

Draft curriculum committee members:

1. Miss Ismat Khadija, Instructor, RITE, Mansehra.
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